

Remarks:

In view of the foregoing amendments and these remarks, it is respectfully submitted that the objections raised in the Office Action dated July 25, 2004 have been overcome. Applicant notes that the Amendment B originally filed on December 20, 2004 was not entered. Hence, this amendment amends the claims from the form set forth in Amendment A, filed May 28, 2004.

Claims 1 and 17 have been amended, without prejudice, to limit the invention to a process in which recordable OSDs having recordable data layers are die-cut through the recordable data layer with minimal damage to the recordable data layer

Claims 14 through 16 have been withdrawn.

Claims 2 through 13 remain unchanged.

Paragraphs [0001], [0007], [0012], [0013], [0017], [0018], [0019], and [0020] have been amended.

Formal drawings have been submitted herewith.

Applicant wishes to thank the Examiner for the courtesy extended to the Applicant's agent, Mr. Andrew Hicks, at the telephone interview on December 1, 2004. During the interview, the Examiner agreed that the method as described in the application inherently teaches cutting through a data layer. To clarify this, the Examiner requested that the Applicant amend paragraph [0019] to include language clarifying that the data layer of a standard CD/DVD extends to the periphery of the CD/DVD disc. In addition, the Examiner requested that the term OSD be amended to Optical Storage Disc, from Optical Storage Device.

Accordingly, and further to the interview, Applicant has amended paragraph [0019], which amendment is supported by the term "standard circular CD/DVD" within paragraph [0019] as originally filed.

Additionally, and further to the Examiner's comments during the telephone interview, Applicant has amended claim 1 to limit the meaning of the term OSD to optical storage disc, rather than optical storage device. Applicant has similarly amended paragraphs [0001], [0007], [0012], [0013], [0017], [0018], [0019], and [0020] for consistency.

Discussion of Amendments and References

In response to the Examiner's request that claims 14 through 16 be removed from the application, Applicant has withdrawn claims 14 through 16, as they are directed to non-elected claims.

35 U.S.C. 112 objection

With respect to the Examiner's rejection of claims 1 through 13 and 17 under 35 U.S.C. 112, Applicant submits that the subject matter of the claims is supported by the written description. As discussed in the telephone interview, the method claimed, including die-cutting the OSD "and a data layer of the OSD" is supported by a careful reading of the description, as discussed below. In addition, the data layer is also defined and described throughout the specification.

At paragraph [0019], Applicant refers to a "standard circular CD/DVD" which is die-cut in accordance with the invention. As is well-known in the art, and as the Examiner agreed during the telephone interview, a standard circular CD/DVD is one which includes a data layer that extends from an inner circumference adjacent the central hole of a CD/DVD, to the periphery of the circular disc.

As described in paragraphs [0002] and [0003], optical storage discs (OSDs) include a circular piece of injection molded and transparent plastic having a 12 cm diameter. With read-only discs, the polycarbonate includes a long, tight spiral originating at the centre of the disc and having billions of tiny bumps coated with an aluminum reflective layer, thereby corresponding to data bits when read. With respect to recordable OSDs, the data layer comprises a chemical compound which may be altered to represent the light equivalent of a physical bump. In re-

recordable OSDs, this compound is capable of being altered many times. A person reading Applicant's specification would understand the term "data layer" of a standard OSD to mean a layer that either contains data or is capable of containing data, and extends from the inner circumference adjacent the central hole of the OSD to the periphery of the OSD. In other words, the data layer is data storage media within a standard OSD.

As per the Examiner's suggestion during the telephone interview, Applicant has amended paragraph [0019] to clarify this fact. The Examiner has confirmed that this clarification does not constitute new matter.

In addition, and as suggested by the Examiner, Applicant has amended the description such that the term "OSD" now refers to an Optical Storage Disc, rather than an Optical Storage Device.

With the above understanding of the term "data layer", it is clear from Applicant's description that the disclosed die-cutting method cut through a data layer as the standard OSD is cut. Applicant has reproduced the following portions of the description which support this understanding:

In the Background

- paragraph [0008] "traditional methods of shaping CDs results in substantial damage to the data layer beyond the immediate edge" due in part to poor adhesion of the data layer to the plastic substrate.

In the Detailed Description

- Paragraph [0027]: "The process of cutting an OSD involves parameters which must be controlled to ensure minimal damage to the data layer and to produce an aesthetically acceptable edge".

- Paragraph [0028]: “the risk of damage to the data layer is greater than with read-only OSD’s where an improperly controlled die-cutting process may shatter the data layer or cause it to lift away from the plastic layer.”
- Paragraph [0029]: “The removal of the cut disk 26a before retraction prevents any upward pressure on the edge of the data layer”

A person reading the application as a whole would clearly realize that Applicant is cutting through the data layer. In paragraph [0008], the “immediate edge” implies that the data layer extends from the immediate edge, i.e. the cut edge, inward. Applicant is stating that cutting through a data layer is not successful using prior art systems due to the damage to the data layer at the immediate edge and extending inward.

Moreover, and with respect to paragraph [0028], if Applicant’s system did not cut through the data layer, i.e. if the cut of the OSD included only polycarbonate and no data layer, Applicant would not be concerned with adhesion of the data layer to the polycarbonate following cutting, as the data layer would be undisturbed.

In the detailed description, the “aesthetically acceptable edge” clearly refers to the edge of the shaped OSD, and Applicant has expressed concern for the integrity of the data layer due to the fact that it is exposed in the shaped OSD by die-cutting. This fact is particularly clear in light of Applicant’s statement regarding problems in the art relating to cutting and separation of the data layer from the polycarbonate.

Applicant therefore submits that it is clear from the description that the data layer is cut, and is exposed at the cut edge of the shaped OSD after cutting.

35 U.S.C. 102 objection

In response to the Examiner’s objection to claims 1 and 17 as anticipated by Rohde, Applicant respectfully disagrees. As discussed in the telephone interview and agreed by the Examiner, Rohde does not teach die-cutting through a data layer. Moreover, because Rohde does not

teach die-cutting through a data layer, Rohde does not teach die-cutting through a recordable data layer, and does not teach cutting through a recordable data layer with minimal damage to the recordable data layer as now set forth in claims 1 and 17.

Moreover, Applicant submits that Rohde does not suggest cutting through a recordable data layer and as such is not sufficient to teach the reader to successfully die cut through a recordable data layer of a recordable OSD. Furthermore, Rohde certainly provides no direction as to how the integrity of the recordable data layer may be maintained as Rohde makes no reference to recordable OSD but merely mentions CD-ROMs or other pre-recorded OSDs

Still further, it is Applicant's position that Rohde teaches the shaping of a polycarbonate disk that includes a data layer only on the portions of the disk that will be within the final shaped product. The problem solved by Applicant's invention is not addressed by Rohde. The area of the disc through which the Rohde disk is cut does not include a data layer, and therefore, Rhode does not cut through a data layer. Hence, Rohde does not encounter the problems solved by Applicant's invention. Rohde's disks must be carefully designed prior to cutting, as inclusion of a larger than warranted data layer (i.e., inclusion of a data layer within the cutting axis) will not be useable, as stated in Applicant's description of the prior art. Moreover, the Rohde reference does not disclose a method for stamping through a recordable OSD that includes cutting through a recordable data layer.

As stated in Applicant's previous response, upon reading the entire disclosure of Rohde, it is clear that the concept of stamping discs into a desired shape by cutting the data layer is not taught by Rohde. The art of shaping OSD's includes many examples of failed data layer stamping methods which teach away from the meagre disclosure made by Rohde. Previous stamping attempts have resulted in damaged data layer edges due to excessive shear forces applied during advancement and retraction of the dies. This problem is not addressed by Rohde, and therefore a person of skill in the art of disc shaping would not be led to a successful result.

35 U.S.C. 103(a) objection

The Examiner objected to claims 2, 4, and 8 as obvious in view of Rohde. Applicant submits that in view of the dependency of each of claims 2, 4, and 8 on claim 1, which Applicant submits is in order for allowance, claims 2, 4, and 8 should now also be allowable.

In particular, Rohde does not disclose the subject matter of claim 8. As stated in Applicant's correspondence of May 28, 2004, the Examiner is objecting to claim 8 as an apparatus claim, when claim 8 is in fact a method involving the use of a female die. The Examiner has not provided any evidence to show that a reader would be motivated to remove the shaped OSD prior to withdrawal of the die set, or to use a female die that would allow such removal. Applicant has found that in one embodiment of the invention, to improve the edge characteristics of the shaped OSD, it is preferable to carry out the method using the female die mentioned in claim 8.

In view of the Examiner's objection to claims 3 and 9 in view of Rohde and Bree, Applicant reiterates the comments made in Applicant's correspondence of May 28, 2004. Applicant submits that Bree teaches away from the instant invention. Bree teaches that stamping/punching of materials using a male/female die set results in a domed product with damaged edges (as shown in Figures 3a, 3b, and at column 1, lines 24 through 38). As emphasized in Applicant's previous correspondence, Bree uses a raised cutting edge only to score the desired shape for later punching. Bree states that the raised cutting edge contributes to the problem of deformed edges in the product. Therefore, Bree includes stripper plates to hold down the portions of the substrate surrounding the desired shape (col. 7, lines 36 through 40).

With respect to the Examiner's objection to claim 5 in view of Rohde and Kokai, Applicant refers to comments made in Applicant's correspondence of May 28, 2004. In the Kokai reference, the die set is never fully engaged, and cannot be said to advance and withdraw as a unit. The Kokai die set is only engaged in part and disengaged in part, with full punching achieved by rotation of the dies along each edge of the object.

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Reply to Office action of August 25, 2004

In response to the Examiner's objection to claims 6 and 7 in view of Rohde, Bree, and Kokai, Applicant submits that claims 6 and 7 are allowable in view of their dependence on claim 1 and the remarks set forth above.

In response to the Examiner's objection to claims 11 through 13 as obvious in view of Rohde and Braun, Applicant reiterates that Braun discloses timing rulers and timing disks including a transparent material consisting of a film supporting a light sensitive layer. Braun discloses a thermally stable, moisture resistant sealing material that can be applied with a hot setting lacquer or other adhesive. Applicant is not claiming the sealing of the OSD per se but is claiming a method to seal a shaped OSD. Applicant submits that the methods of claims 11 through 13, which are dependent upon claim 1, are allowable.

With respect to claim 17, Applicant has specified an order for the method steps, which Applicant believes puts claim 17 in condition for allowance.

Applicant submits that the application is in order for allowance, and requests that a timely Notice of Allowance be issued in this case. In the event that the Examiner has any remaining issues with respect to this, the Examiner is invited to telephone the Applicant's undersigned attorney at 314-238-2400 or Applicant's agent, Andrew Hicks, at (403) 282-9889.

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Respectfully Submitted,


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